We Claim:

1. A substrate for attaching an array of biological or chemical analytes, said substrate comprises:

a) a porous, predominantly inorganic layer, derived from a frit layer of individual particles, adhered to a flat, rigid, non-porous, inorganic understructure;

b) said porous inorganic layer characterized as having a plurality of interconnected voids of a predetermined mean size of not less than about 0.1 μm dispersed therethrough, and having void channels that extend through to a top surface of said porous inorganic layer; and

c) said inorganic material and contents of said voids exhibit a high contrast in their indices of refraction relative to each other such as to scatter light.

2. The substrate according to claim 1, further comprising a uniform coating of a binding agent over at least a part of the surface area of said voids and said top surface of said porous inorganic layer.

3. The substrate according to claim 2, wherein said binding agent is a cationic polymer.

4. The substrate according to claim 3, wherein said cationic polymer is either gamma-aminopropyltriethoxysilane or polylysine.

5. The substrate according to claim 1, wherein said non-porous, inorganic understructure has a coefficient of thermal expansion compatible with that of said porous inorganic layer.

6. The substrate according to claim 1, wherein said inorganic material in said porous inorganic layer forms a networked matrix.

7. The substrate according to claim 1, further comprising an interlayer disposed between said porous inorganic layer and said inorganic understructure.

8. The substrate according to claim 1, wherein said interlayer has a coefficient-of-thermal-expansion compatible with said porous inorganic layer and said inorganic understructure.

9. The substrate according to claim 1, wherein said inorganic material is characterized as a material that is non-absorbing and transparent to light when in the form of a solid of an amorphous or single crystal material.

10. The substrate according to claim 9, wherein said material is a glass or a metal oxide.

11. The substrate according to claim 10, wherein said material is a silicate, aluminosilicate, boroaluminosilicate, or borosilicate glass.

12. The substrate according to claim 10, wherein said material is $TiO_2$, $SiO_2$, $Al_2O_3$, $Cr_2O_3$, CuO, ZnO, or $ZrO_2$.

13. The substrate according to claim 1, wherein said porous inorganic layer has a thickness of at least about 5 μm.

14. The substrate according to claim 1, wherein inorganic material particles have a predetermined mean size in the range of about 0.3 μm to about 15 μm.

15. The substrate according to claim 14, wherein said inorganic material particles have a predetermined mean size in the range of about 0.5 μm to about 7 μm.

16. The substrate according to claim 1, wherein said voids have a predetermined mean size in the range of about 0.3 μm to about 15 μm.

17. The substrate according to claim 1, wherein said voids have a predetermined mean size in the range of about 0.5 μm to about 7 μm.

18. The substrate according to claim 1, wherein said content of said voids is either a gas, a liquid, a gel, or a solid.

19. The substrate according to claim 1, wherein said non-porous understructure is made from a glass, glass-ceramic, ceramic, metal or a metal oxide.

20. The substrate according to claim 1, wherein said porous inorganic layer is characterized as having a microstructure that produces a sensitivity of fluorescent molecules of at least one order of magnitude greater than that of a comparable, non-porous substrate.

21. The substrate according to claim 1, wherein said porous inorganic layer has a microstructure derived from at least a partial sintering of said individual particles.

22. A device for performing multiple assays, said device includes:

a planar substrate comprising a porous inorganic layer, derived from a frit layer of individual particles, adhered to a flat, rigid, non-porous, inorganic understructure having a coefficient of thermal expansion compatible with that of said porous inorganic layer;

said porous inorganic layer characterized as forming a networked matrix having a plurality of interconnected voids of a predetermined mean size and having void channels that extend through to a top surface of said porous inorganic layer;

said contiguous inorganic material and contents of said voids exhibit a high contrast in their indices of refraction relative to each other such as to scatter light; and

having a coating of a binding agent over at least a portion of a surface area of said voids and said top surface of said porous inorganic layer.

23. The device according to claim 22, wherein said porous inorganic layer is characterizes as having a microstructure that produces a sensitivity of fluorescent molecules of at least one order of magnitude greater than that of a comparable, non-porous substrate.

24. The device according to claim 22, wherein said binding agent is a cationic polymer.

25. The device according to claim 22, wherein said cationic polymer is either gamma-aminopropyltriethoxysilane or polylysine.

26. The device according to claim 22, further comprising an interlayer disposed between said porous inorganic layer and said inorganic understructure.

27. The device according to claim 22, wherein said continuous inorganic material is an amorphous or single crystal material that is non-absorbing, and transparent to light.

28. The device according to claim 27, wherein said material is a glass, or a metal oxide.

29. The device according to claim 28, wherein said material is a silicate, aluminosilicate, boroaluminosilicate, or borosilicate glass.

30. The device according to claim 28, wherein said material is $TiO_2$, $SiO_2$, $Al_2O_3$, $Cr_2O_3$, CuO, ZnO, or $ZrO_2$.

31. The device according to claim 22, wherein said porous inorganic layer has a thickness of at least about 5 μm.

32. The device according to claim 22, wherein said inorganic material particles have a predetermined mean size in the range of about 0.3 μm to about 15 μm.

33. The device according to claim 32, wherein said inorganic material particles have a predetermined mean size in the range of about 0.5 μm to about 3.5 μm.

34. The device according to claim 22, wherein said voids have a predetermined mean size in the range of about 0.3 μm to about 7 μm.

35. The device according to claim 34, wherein said voids have a predetermined mean size in the range of about 0.5 μm to about 5 μm.

36. The device according to claim 22, wherein said content of said voids consists of either a gas, a gel, or a liquid.

37. The device according to claim 22, wherein said voids are defined by a network of inorganic material having a predetermined mean particle size of not less than about 0.1 μm.